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=> fil hcap  
FILE 'HCAPLUS' ENTERED AT 14:33:15 ON 13 MAY 2011  
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REVISED CLASS FIELDS (/NCL) LAST RELOADED: Feb 2011  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Feb 2011

HCAplus now includes complete International Patent Classification (IPC)  
reclassification data for the fourth quarter of 2010.

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This file contains CAS Registry Numbers for easy and accurate  
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=> d ibib abs hitstr hitind 128 1-2

L28 ANSWER 1 OF 2 HCPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 1990:517123 HCPLUS Full-text  
 DOCUMENT NUMBER: 113:117123  
 ORIGINAL REFERENCE NO.: 113:19857a,19860a  
 TITLE: Coating of substrates with ultrathin layers of polyesters by the Langmuir-Blodgett method  
 INVENTOR(S): Wehrmann, Rolf; Schopper, Heinrich Christian; Nerger, Dittmar  
 PATENT ASSIGNEE(S): Bayer A.-G., Germany  
 SOURCE: Ger. Offen., 21 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3830862	A1	19900322	DE 1988-3830862	198809 10
EP 359016	A2	19900321	EP 1989-115803	198908 26
EP 359016	A3	19910911		
EP 359016	B1	19941012		
R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE				
DK 8904440	A	19900311	DK 1989-4440	198909 08
FI 8904254	A	19900311	FI 1989-4254	198909 08
JP 02150429	A	19900608	JP 1989-231831	198909 08
US 5030516	A	19910709	US 1989-404727	198909 08
CA 1327296	C	19940301	CA 1989-610705	198909 08
PRIORITY APPLN. INFO.:			DE 1988-3830862	A 198809 10

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The title process uses monomol. layers of  $[OZ1(R1)(R2)OCOZ2(R3)(R4)CO]_n$  ( $Z1 =$  diol residue;  $Z2 =$  dicarboxylic acid residue;  $\geq 1$  of  $R1-4 = C>8$  aliphatic group and the remainder are H or Me, or  $R1$  and  $R2$  or  $R3$  and  $R4$  form an alkylene ring;  $n = 2-80$ ). A solution (50  $\mu L$ ) of 9.63 mg diethylene glycol-dioctadecylmalonic acid copolymer in 10 mL  $CHCl_3$  was spread on  $H_2O$  to give monomol. films (thickness  $23.8 \pm 1.4 \text{ \AA}$ ) which were collected (10-40 individual layers) on aluminized polycarbonate films. Ellipsometric and x-ray scattering data for coatings of 8 polyesters are given.  
 IT 126367-85-98, Diethyleneglycol-dioctadecyl malonic acid

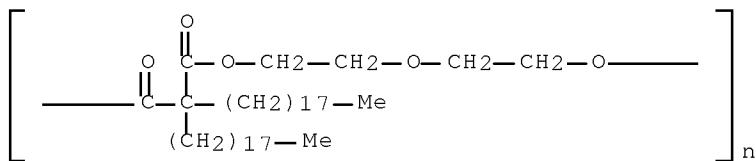
copolymer, SRU

RL: PREP (Preparation)

(ultrathin coatings, manufacture of, Langmuir-Blodgett film-formation in)

RN 126367-85-9 HCPLUS

CN Poly[oxy-1,2-ethanediyl oxy-1,2-ethanediyl oxy(2,2-dioctadecyl-1,3-dioxo-1,3-propanediyl)] (9CI) (CA INDEX NAME)



IPCI B05D0001-00 [ICM,5]; B05D0005-00 [ICS,5]; B05D0005-06 [ICS,5];  
 B05D0007-26 [ICS,5]; C09D0167-02 [ICS,5]; H01B0001-00 [ICS,5];  
 G02B0006-10 [ICA,5]; G02F0001-35 [ICA,5]; G01N0027-00 [ICA,5];  
 H01L0029-28 [ICA,5]

IPCR B05D0001-20 [I,A]; C08G0063-16 [I,A]; C08G0063-181 [I,A];  
 C08G0063-199 [I,A]; C08G0063-46 [I,A]; C08G0063-66 [I,A];  
 C08G0063-672 [I,A]; C08G0063-685 [I,A]; C08J0005-18 [I,A];  
 C09D0167-00 [I,A]; C09D0167-02 [I,A]; C09K0003-18 [I,A]

CC 42-2 (Coatings, Inks, and Related Products)

IT 126367-85-9P, Diethyleneglycol-dioctadecyl malonic acid copolymer, SRU 129113-66-2P, Diethylene glycol-dioctadecylmalonic acid copolymer 129113-67-3P, Hexanedioic acid-dioctadecyl malonic acid copolymer 129113-69-5P, Hexanedioic acid-octadecyl 3,5-dihydroxybenzoate copolymer 129113-71-9P 129113-72-0P 129113-73-1P 129113-74-2P, Adipic acid-4,4'-cyclododecanediylidenediphenol copolymer 129113-75-3P, Dioctadecylmalonic acid-2,2'-(methylimino)diethanol copolymer 129154-32-1P, Hexanedioic acid-dioctadecyl malonic acid copolymer, SRU 129154-33-2P, Hexanedioic acid-octadecyl 3,5-dihydroxybenzoate copolymer, SRU 129154-34-3P, Pentaerythritol dioctadecanoate-terephthalic acid copolymer, SRU 129154-35-4P 129154-36-5P 129154-37-6P, Adipic acid-4,4'-cyclododecanediylidenediphenol copolymer, SRU 129154-38-7P, Dioctadecylmalonic acid-2,2'-(methylimino)diethanol copolymer, SRU

RL: PREP (Preparation)

(ultrathin coatings, manufacture of, Langmuir-Blodgett film-formation in)

L28 ANSWER 2 OF 2 HCPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 1990:165894 HCPLUS Full-text

DOCUMENT NUMBER: 112:165894

ORIGINAL REFERENCE NO.: 112:27887a,27890a

TITLE: Polyesters and polyurethanes as prepolymerized materials for Langmuir-Blodgett films:

preparation and characterization of multilayers  
 Nerger, D.; Ohst, H.; Schopper, H. C.; Wehrmann, R.

AUTHOR(S): Cent. Res., Bayer A.-G., Krefeld, D-4150/11,  
 Fed. Rep. Ger.

CORPORATE SOURCE: Thin Solid Films (1989), 178, 253-9

SOURCE:

DOCUMENT TYPE: CODEN: IHSFAP, ISSN: 0040-0050  
LANGUAGE: English

AB Two new types of amphiphilic polymers, namely polyesters and polyurethanes, capable of forming monolayers at an air-water interface were synthesized. The polyesters were obtained by the condensation of both long-chain substituted diols and diesters with available materials. The amphiphilic polyurethanes were prepared by polyaddn. of long-chain diols and common diisocyanates. Pressure-area isotherms show the formation of a more-or-less liquid-analogous state. Y-mode Langmuir-Blodgett multilayers of these performed polymers can be transferred to rigid substrates with a constant transfer ratio. In polyester and polyurethane multilayers, the aliphatic side-chains are perpendicular to the film as evidenced by ellipsometric and x-ray measurements of film thickness and orientation.

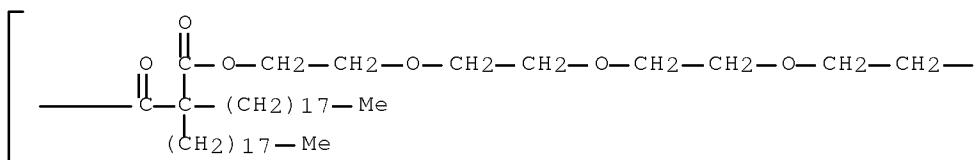
IT 126367-84-8 126367-85-9

RL: PRP (Properties)  
(Langmuir-Blodgett multilayer films from, preparation and characterization of)

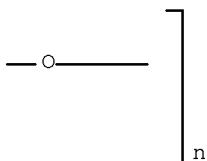
characterization

RN 126367-84-8 HCAFPLUS  
CN Poly[oxy-1,2-ethanediylloxy-1,2-ethanediylloxy-1,2-ethanediylloxy-1,2-ethanediylloxy(2,2-dioctadecyl-1,3-dioxo-1,3-propanediyl)] (9CI) (CA INDEX NAME)

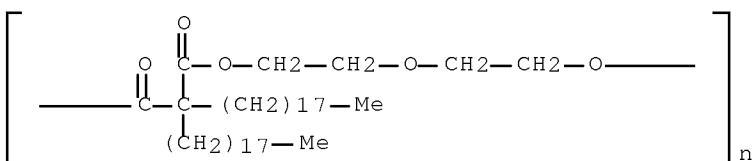
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PAGE 1-B

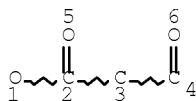


RN 126367-85-9 HCPLUS  
CN Poly[oxy-1,2-ethanediyl]oxy-1,2-ethanediyl[2,2-dioctadecyl-1,3-dioxo-1,3-propanediyl] (9CI) (CA INDEX NAME)



CC 66-5 (Surface Chemistry and Colloids)  
 Section cross-reference(s): 35, 36  
 IT 82583-65-1 126351-55-1 126351-56-2 126351-57-3  
 126367-84-8 126367-85-9 126367-86-0  
 126419-46-3  
 RL: PRP (Properties)  
 (Langmuir-Blodgett multilayer films from, preparation and  
 characterization of)  
 OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS  
 RECORD (1 CITINGS)

=> d que stat 130  
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 OR 108-31-6/BI OR 115-77-5/BI OR 123-54-6/BI OR 141-32-2/  
 BI OR 311342-07-1/BI OR 57472-68-1/BI OR 705973-70-2/BI  
 OR 705973-71-3/BI OR 705973-72-4/BI OR 705973-73-5/BI OR  
 705973-74-6/BI)  
 L3 STR



NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE  
 L5 152896 SEA FILE=REGISTRY SSS FUL L3  
 L6 4 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L5 AND L2  
 L8 173 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L6(L)PREP+ALL/RL  
 L29 QUE SPE=ON ABB=ON PLU=ON CURE# OR CURABLE OR CURING O  
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 L30 15 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L8 AND L29

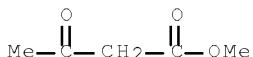
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L30 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 2009:750642 HCAPLUS Full-text  
 DOCUMENT NUMBER: 151:150104  
 TITLE: Method for preparation of solvent-based  
 polyurethane curing agent containing  
 low free toluene diisocyanate content for  
 polyurethane coating  
 INVENTOR(S): Zeng, Guangming; Kong, Shuxiang; Li, Jinghong;  
 Liu, Xiaoyan; Ma, Hongxiao  
 PATENT ASSIGNEE(S): Guangdong Huarun Paintis Co., Ltd., Peop. Rep.  
 China  
 SOURCE: Faming Zhanli Shengqing Gongkai Shuomingshu,  
 11pp.  
 CODEN: CNXXEV

DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 101456940	A	20090617	CN 2008-10220784	200812 31
CN 101456940	B	20110420	CN 2008-10220784	200812 31
PRIORITY APPLN. INFO.:				

AB Title method comprises (1) reacting toluene isocyanate with a polyol at 40-90°C in solvent, sampling and detecting NCO content to monitor the reaction degree; and (2) adding acetoacetic ester, reacting at low temperature and sampling and detecting NCO content to monitor the reaction degree. The invention has the following advantages: (1) low cost; (2) low content of free toluene diisocyanate monomer, low viscosity and good flexibility; (3) stable product performance.  
 IT 105-45-3DP, Methyl acetoacetate, polymers  
 RL: IMF (Industrial manufacture); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of solvent-based polyurethane curing agent  
 containing low free toluene diisocyanate content for polyurethane  
 coating)  
 RN 105-45-3 HCPLUS  
 CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



IPCI C08G0018-30 [I,A]; C08G0018-34 [I,A]; C08G0018-78 [I,A]; C09D0175-04 [I,A]  
 IPCR C08G0018-30 [I,A]  
 CC 42-3 (Coatings, Inks, and Related Products)  
 ST polyurethane curing agent prepn free toluene diisocyanate  
 content coating  
 IT Coating materials  
 Crosslinking agents  
 (preparation of solvent-based polyurethane curing agent  
 containing low free toluene diisocyanate content for polyurethane  
 coating)  
 IT Polyurethanes  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (preparation of solvent-based polyurethane curing agent  
 containing low free toluene diisocyanate content for polyurethane  
 coating)  
 IT 1170316-40-1P  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use);  
 PREP (Preparation); USES (Uses)  
 (preparation of solvent-based polyurethane curing agent  
 containing low free toluene diisocyanate content for polyurethane

coating)

IT 56-81-5DP, Glycerol, polymers 57-55-6DP, 1,2-Propanediol, polymers 77-99-6DP, Trimethylolpropane, polymers 105-08-8DP, 1,4-Cyclohexanedimethanol, polymers 105-45-3DP, Methyl acetoacetate, polymers 107-21-1DP, Ethylene glycol, polymers 107-88-0DP, 1,3-Butanediol, polymers 110-63-4DP, 1,4-Butanediol, polymers 111-46-6DP, Diethylene glycol, polymers 112-27-6DP, Triethylene glycol, polymers 115-77-5DP, Pentaerythritol, polymers 115-84-4DP, \*2-Butyl-2-ethyl-1,3-propanediol, polymers 126-30-7DP, Neopentyl glycol, polymers 126-58-9DP, Dipentaerythritol, polymers 141-97-9DP, Ethyl acetoacetate, polymers 504-63-2DP, 1,3-Propanediol, polymers 542-08-5DP, Isopropyl acetoacetate, polymers 591-60-6DP, Butyl acetoacetate, polymers 2163-42-0DP, 2-Methyl-1,3-propanediol, polymers 2388-18-3DP, polymers, preparation 5459-04-1DP, polymers 6079-90-9DP, polymers 6079-98-7DP, Glycerol triacetoacetate, polymers 7062-74-0DP, polymers 7779-75-1DP, Isobutyl acetoacetate, polymers 13018-41-2DP, polymers 14276-67-6DP, polymers 22208-25-9DP, Trimethylolpropane triacetoacetate, polymers 23235-61-2DP, D trimethylolpropane, polymers 24871-74-7DP, polymers 25265-71-8DP, Dipropylene glycol, polymers 26471-62-5DP, TDI, polymers 32818-60-3DP, Pentaerythritol tetraacetoacetate, polymers 32818-62-5DP, polymers 58213-74-4DP, polymers 58213-75-5DP, polymers, preparation 145020-19-5DP, polymers 183377-21-1DP, polymers 202935-62-4DP, polymers 1170316-38-7P 1170316-39-8P  
RL: IMF (Industrial manufacture); RCT (Reactant);  
PREP (Preparation); RACT (Reactant or reagent)  
(preparation of solvent-based polyurethane curing agent containing low free toluene diisocyanate content for polyurethane coating)

L30 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2008:558440 HCAPLUS Full-text

DOCUMENT NUMBER: 149:10832

TITLE: Method for preparing carbon dicarbonyl light-sensitive resin

INVENTOR(S): Pang, Laixing; Yang, Jianwen

PATENT ASSIGNEE(S): Guangzhou Boxing Chemical Technology Co., Ltd., Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 8pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

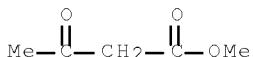
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 101173017	A	20080507	CN 2007-10030756	200710 10
PRIORITY APPLN. INFO.:			CN 2007-10030756	200710 10

AB The title method comprises (1) mixing a polyacrylate (e.g., trimethylolpropane triacrylate) and an active methylene-containing  $\beta$ -dicarbonyl compound (e.g., Et acetoacetate), (2) adding an insol. solid basic catalyst (e.g., aluminum

oxide-carried potassium fluoride), heating and Michael addition reacting, and (3) separating the resin from the solid basic catalyst. The resin has good storage stability, rapid curing without photo initiators, and is used for photocurable paint and printing ink.

IT 105-45-3DP, Methyl acetoacetate, polymers  
 RL: IMF (Industrial manufacture); TEM (Technical or  
 engineered material use); PREP (Preparation); USES (Uses)  
 (method for preparing carbon dicarbonyl light-sensitive resin for)  
 RN 105-45-3 HCPLUS  
 CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



IPCI C08F0020-10 [I,A]; C07C0069-54 [I,A]; C07C0067-46 [I,A]; C09D0004-00 [N,A]

IPCR C08F0020-10 [I,A]; C07C0067-46 [I,A]; C07C0069-54 [I,A]; C09D0004-00 [I,A]

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 42

IT 9003-53-6D, Polystyrene, modified

RL: CAT (Catalyst use); USES (Uses)  
 (crosslinked; method for preparing carbon dicarbonyl  
 light-sensitive resin for)

IT 105-45-3DP, Methyl acetoacetate, polymers 123-54-6DP,  
 Acetoacetone, polymers 504-02-9DP, 1,3-Cyclohexanedione, polymers  
 1522-22-1DP, polymers 3524-68-3DP, Pentaerythritol triacrylate,  
 polymers 4986-89-4DP, Pentaerythritol tetraacrylate, polymers  
 13048-33-4DP, 1,6-Hexanediol diacrylate, polymers 15625-89-5DP,  
 Trimethylolpropane triacrylate, polymers 42978-66-5DP,  
 Tripropylene glycol diacrylate, polymers  
 RL: IMF (Industrial manufacture); TEM (Technical or  
 engineered material use); PREP (Preparation); USES (Uses)  
 (method for preparing carbon dicarbonyl light-sensitive resin for)

L30 ANSWER 3 OF 15 HCPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2008:442041 HCPLUS Full-text

DOCUMENT NUMBER: 148:428064

TITLE: Decorative sheets with high interlayer adhesion,  
 and their manufacture

INVENTOR(S): Tanaka, Masayoshi

PATENT ASSIGNEE(S): Dai Nippon Printing Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 31pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

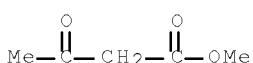
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2008080601	A	20080410	JP 2006-262092	200609
PRIORITY APPLN. INFO.:			JP 2006-262092	27
				200609

AB The decorative sheets consist of, successively, substrate sheets, ink layers having solid-fill-ink layers and/or patterned-ink layers, adhesive layers, transparent resin layers, and surface protective layers, wherein the ink layers and/or adhesive layers are formed by applying aqueous coating agents containing (A) water-soluble or water-dispersible blocked  $\geq 2$  functional polyisocyanates which hardly dissociate into free isocyanate groups and blocking agents at coating temperature or at temperature of mixing components of the coating agents, and (B) water-soluble or water-dispersible compds. bearing  $\geq 2$  carbodiimide groups. Preferably, the blocked polyisocyanates undergo dissociation upon heat impressed in or after forming the transparent resin layers. The decorative sheets may further have back primer layers at opposite side of the substrate sheet from the ink layers. In manufacture of the decorative sheets, heat is impressed after forming the ink- and adhesive layers in order to dissociate the blocking agents. The aqueous coating agents are environmentally benign and have long pot life, and provide isocyanate-crosslinked ink and/or adhesive layers by heat treatment, and the decorative sheets show high delamination resistance. Thus, polypropylene substrate sheet (a) was gravure printed with primer (b)-forming aqueous polyurethane-isocyanate coating solution on one side and dried, then the other side was gravure printed with, successively, solid-full-ink-layer (c)-forming aqueous coating solution containing water-thinned polyurethane white ink (Eau De WKE White) 100, polyisocyanate (Aquanate 120) blocked with 3,5-dimethylpyrazole 2.5, and carbodiimide compound (Carbodilite E 04) 2.5 parts, patterned-ink-layer (d)-forming aqueous coating solution containing the same blocked polyisocyanate 2.5, carbodiimide compound 2.5, and water-thinned polyurethane inks 100 parts, and adhesive layer (e)-forming aqueous coating solution containing the blocked polyisocyanate 6, the same carbodiimide compound 10, and water-thinned polyurethane adhesive (HO 18) 100 parts, then two-tier transparent resin constituted by maleic acid-modified polypropylene layer and random propylene copolymer layer was laminated on the adhesive layer by coextrusion and hot embossed at  $160^\circ$  to give uneven surface, whereto protective layer (f)-forming aqueous polyurethane-isocyanate coating solution was further gravure printed, and 7 day-aged at  $25^\circ$  to give decorative sheet (as above).

IT 105-45-3DP, reaction products with polyisocyanates  
 RL: IMF (Industrial manufacture); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (blocked crosslinking agents; decorative sheets with  
 ink/adhesive layers made from coating agents containing blocked  
 $\geq 2$  functional polyisocyanates and carbodiimides)

RN 105-45-3 HCPLUS  
 CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



IPCI B32B0033-00 [I,A]; B32B0025-08 [I,A]; C09D0011-00 [I,A]; C09J0175-04 [I,A]; C09J0011-06 [I,A]  
 IPCR B32B0033-00 [I,A]; B32B0025-08 [I,A]; C09D0011-00 [I,A]; C09J0011-06 [I,A]; C09J0175-04 [I,A]  
 CC 38-3 (Plastics Fabrication and Uses)  
 ST decorative sheet ink adhesive layer crosslinker blocked polyisocyanate; carbodiimide water resistant agent coating decorative sheet

IT Crosslinking agents  
(blocked polyisocyanates; decorative sheets with ink/adhesive layers made from coating agents containing blocked  $\geq 2$  functional polyisocyanates and carbodiimides)

IT Amines, reactions  
Esters, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction products with polyisocyanates, blocked crosslinking agents; decorative sheets with ink/adhesive layers made from coating agents containing blocked  $\geq 2$  functional polyisocyanates and carbodiimides)

IT 774595-04-9DP, Aquanate 120, reaction products with blocking agents  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(blocked crosslinking agents, in ink/adhesive layers; decorative sheets with ink/adhesive layers made from coating agents containing blocked  $\geq 2$  functional polyisocyanates and carbodiimides)

IT 67-51-6DP, reaction products with polyisocyanates  
105-45-3DP, reaction products with polyisocyanates  
108-18-9DP, Diisopropylamine, reaction products with polyisocyanates  
108-59-8DP, reaction products with polyisocyanates  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(blocked crosslinking agents; decorative sheets with ink/adhesive layers made from coating agents containing blocked  $\geq 2$  functional polyisocyanates and carbodiimides)

IT 75-13-8DP, Isocyanic acid, esters, polymers  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(blocked, crosslinking agents; decorative sheets with ink/adhesive layers made from coating agents containing blocked  $\geq 2$  functional polyisocyanates and carbodiimides)

IT 774595-04-9, Aquanate 120  
RL: MOA (Modifier or additive use); USES (Uses)  
(crosslinking agents, in ink/adhesive layers; decorative sheets with ink/adhesive layers made from coating agents containing blocked  $\geq 2$  functional polyisocyanates and carbodiimides)

L30 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 2007:727444 HCAPLUS Full-text  
 DOCUMENT NUMBER: 147:119797  
 TITLE: Radiation-curable compositions containing substituted  $\beta$ -dicarbonyl compounds and film forming therewith  
 INVENTOR(S): Yatsugi, Kenichi; Toda, Tetsuya; Takeda, Miho  
 PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 39pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2007169487	A	20070705	JP 2005-369616	

200512

22

PRIORITY APPLN. INFO.:

JP 2005-369616

200512

22

AB The compns., forming layers by exposure to actinic rays (in atmospheric of O concentration  $\leq$ 15%), contain compds. having  $\geq$ 1 substituted  $\beta$ -dicarbonyl moiety COCR1R2CO [R1, R2 = electron-withdrawing group, C1-8 alkyl, linear alkyl having electron-withdrawing group at  $\beta$ ,  $\gamma$ , or  $\delta$  position to the 2 carbonyl, where R1 = R2 = Me (or Et) when both of two are C1-8 alkyl]. Thus, 4 parts Et 3-acetyl-3-methyl-4-oxopentanoate (prepared from 2,4-pentanedione, Et bromoacetoacetate, and MeI) were blended with Ebecryl 5129 (urethane acrylate) 45, trimethylolpropane triacrylate 25, and tripropylene glycol diacrylate 30 parts, applied on Al, and exposed to UV through a polyethylene film to give a coated Al sheet showing excellent resistance when rubbed with a MEK-submerged cotton and pencil hardness HB.

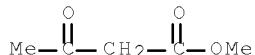
IT 105-45-3DP, Methyl acetoacetate, reaction products with trimethylolpropane

RL: CAT (Catalyst use); IMF (Industrial manufacture);  
PREP (Preparation); USES (Uses)

(photocurable coatings containing substituted  $\beta$ -dicarbonyl compds. and showing good sensitivity to actinic rays)

RN 105-45-3 HCPLUS

CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



IPCI C08F0002-50 [I,A]; G03F0007-031 [I,A]

IPCR C08F0002-50 [I,A]; G03F0007-031 [I,A]

CC 42-7 (Coatings, Inks, and Related Products)

ST substituted beta carbonyl contg radiation curable coating; ethyl acetyl methyloxopentanoate initiator photocurable acrylic urethane coating

IT Coating materials

(radiation-curable, solvent-resistant; photocurable coatings containing substituted  $\beta$ -dicarbonyl compds. and showing good sensitivity to actinic rays)

IT 105-45-3DP, Methyl acetoacetate, reaction products with trimethylolpropane

RL: CAT (Catalyst use); IMF (Industrial manufacture);  
PREP (Preparation); USES (Uses)

(photocurable coatings containing substituted  $\beta$ -dicarbonyl compds. and showing good sensitivity to actinic rays)

L30 ANSWER 5 OF 15 HCPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2006:558460 HCPLUS Full-text

DOCUMENT NUMBER: 145:46624

TITLE: Photocurable Michael addition polymers

INVENTOR(S): Fansler, Duane D.; Lewandowski, Kevin M.; Gaddam, Babu N.

PATENT ASSIGNEE(S): 3M Innovative Properties Company, USA

SOURCE: U.S. Pat. Appl. Publ., 13 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

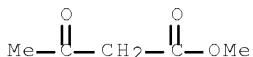
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060128825	A1	20060615	US 2004-9588	200412 10
US 7307106	B2	20071211		
WO 2006065369	A2	20060622	WO 2005-US39099	200510 28
WO 2006065369	A3	20060803		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
EP 1819737	A2	20070822	EP 2005-820205	200510 28
EP 1819737	B1	20110330		
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				
CN 101076545	A	20071121	CN 2005-80042533	200510 28
CN 101076545	B	20110302		
JP 2008523205	T	20080703	JP 2007-545465	200510 28
AT 503774	T	20110415	AT 2005-820205	200510 28
IN 2007CN02490	A	20070907	IN 2007-CN2490	200706 11
KR 2007093097	A	20070917	KR 2007-7015654	200707 09
PRIORITY APPLN. INFO.:			US 2004-9588	A 200412 10
			WO 2005-US39099	W 200510 28

AB A curable composition is described comprising a Michael donor component, a polyacryl component, and a monoacryl component, where at least one of the Michael donor or monoacryl components comprises a pendent photoinitiator group. A Michael addition polymer that is the Michael addition reaction product of these components is also described.

IT 105-45-3DP, Methyl acetoacetate, michael adduct acrylic derivs.  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (photocurable Michael addition polymers)

RN 105-45-3 HCPLUS

CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



INCL 522115000  
 IPCI C08J0003-28 [I,A]; C08G0063-00 [I,A]; C08G0071-04 [I,A]; C08G0075-00 [I,A]; C08F0002-48 [I,A]  
 IPCR C08J0003-28 [I,A]; C08G0063-00 [I,A]; C08F0002-48 [I,A]; C08G0071-04 [I,A]; C08G0075-00 [I,A]  
 NCL 522/115.000; 522/034.000; 522/035.000; 522/036.000; 522/042.000;  
 522/044.000; 522/046.000; 522/178.000; 522/182.000; 522/904.000;  
 522/905.000; 528/220.000; 528/222.000; 528/224.000; 528/226.000;  
 528/228.000  
 CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 42  
 IT 105-45-3DP, Methyl acetoacetate, michael adduct acrylic derivs. 13048-33-4DP, Sr 238, polymers with michael adduct acrylic derivs. 251960-17-5P 890411-14-0DP, michael adduct acrylic derivs. 890411-15-1P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (photocurable Michael addition polymers)  
 REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 6 OF 15 HCPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 2005:1074171 HCPLUS Full-text  
 DOCUMENT NUMBER: 143:347660  
 TITLE: Functional group-containing polyoxyalkylene polymers with low impurity salts  
 INVENTOR(S): Ueshima, Kenji  
 PATENT ASSIGNEE(S): Kaneka Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2005272733	A	20051006	JP 2004-90555	200403

25

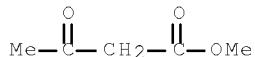
JP 4575010 B2 20101104 JP 2004-90555 200403  
 PRIORITY APPLN. INFO.: 25

AB Title polymers have a structure containing unsatd. groups O[CH<sub>2</sub>CH(R<sub>1</sub>CH:CH<sub>2</sub>)O]<sub>n</sub>CH<sub>2</sub>CHOH(R<sub>1</sub>CH:CH<sub>2</sub>), wherein R<sub>1</sub> = alkane, alkene, alkyne, ether, ester, ketone, amide, and aromatic group and n = ≥ 0 integer. Thus, propylene oxide was polymerized using polypropylene glycol triol and a zinc hexacyanocobaltate glyme complex to give hydroxy-terminated polypropylene glycol with mol. weight 7200, 100 g of which was mixed with a sodium methoxide solution, heated at 120° to remove methanol, 8 mL allyl glycidyl ether was added therein and reacted, 3.8 mL dimethoxymethylsilane was added therein and reacted in the presence of platinum vinylsiloxane for 2 h to give a polyoxyalkylene having crosslinkable silane, 100 parts of the resulting compound was mixed with 2 parts U 220 and stored for 1 day to give a elastic product.

IT 105-45-3DP, Methyl acetoacetate, reaction products with allyl-terminated polypropylene glycol triols and dimethoxymethylsilane, hydrolyzed  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of functional group-containing polyoxyalkylene polymers with low impurity salts)

RN 105-45-3 HCPLUS

CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



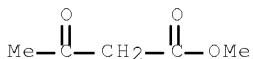
IPCI C08G0065-10 [I,A]; C08G0065-14 [I,A]; C08G0065-332 [I,A];  
 C08G0065-336 [I,A]  
 IPCR C08G0065-331 [I,A]; C08G0065-336 [I,A]; C08G0065-10 [I,A];  
 C08G0065-14 [I,A]; C08G0065-332 [I,A]  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 37  
 IT 96-33-3DP, Methyl acrylate, reaction products with allyl-terminated polypropylene glycol triols and dimethoxymethylsilane, hydrolyzed  
 105-45-3DP, Methyl acetoacetate, reaction products with allyl-terminated polypropylene glycol triols and dimethoxymethylsilane, hydrolyzed 106-92-3DP, Allyl glycidyl ether, reaction products with polypropylene glycol triols and dimethoxymethylsilane, hydrolyzed 674-82-8DP, Diketene, reaction products with allyl-terminated polypropylene glycol triols and dimethoxymethylsilane, hydrolyzed 16881-77-9DP, Dimethoxymethylsilane, reaction products with allyl-terminated polypropylene glycol triols, hydrolyzed 25322-69-4DP, Polypropylene glycol, triols, reaction products with allyl glycidyl ether and dimethoxymethylsilane, hydrolyzed  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of functional group-containing polyoxyalkylene polymers with low impurity salts)

DOCUMENT NUMBER: 142:221270  
 TITLE: UV-curable compositions with good adhesion and decreased odor  
 INVENTOR(S): Takayanagi, Yasuo  
 PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005041923	A	20050217	JP 2003-200372	200307 23
PRIORITY APPLN. INFO.:			JP 2003-200372	200307 23

OTHER SOURCE(S): MARPAT 142:221270

AB The compns., useful for coatings, inks, etc., contain (A) compds. having  $\geq 1$  epoxy groups in a mol., (B) photochem. cationic polymerization catalysts, and (C) Michael adducts of compds. having  $\geq 2$  acryloyl groups in a mol. with R<sub>1</sub>COCH<sub>2</sub>COR<sub>2</sub> (R<sub>1</sub> = C<sub>1-18</sub> alkyl, aryl, alicyclic; R<sub>2</sub> = C<sub>1-18</sub> alkyl, aryl, alicyclic, alkoxy). Thus, a coating comprising alicyclic epoxy compound (Cyracure UVR 6105) 70, photochem. cationic polymerization catalyst (Cyracure UVI 6990) 4, and Michael adducts of trimethylolpropane triacrylate with Me acetoacetate 26 was coated on a PET film and on an Al sheet and irradiated with UV lamp at 160 W/cm to show pencil hardness (JIS K 5400) 2H, good adhesion to the substrates and solvent resistance, and no odor after curing.  
 IT 105-45-3DP, Methyl acetoacetate, Michael adduct with trimethylolpropane triacrylate  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (Michael adduct-containing UV-curable compns. with good adhesion and decreased odor)  
 RN 105-45-3 HCPLUS  
 CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



IPCI C08G0059-42 [ICM, 7]  
 IPCR C08G0059-42 [I, A]  
 CC 42-9 (Coatings, Inks, and Related Products)  
 IT Michael reaction  
 (Michael adduct-containing UV-curable compns. with good adhesion and decreased odor)  
 IT Epoxy resins, uses  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (Michael adduct-containing UV-curable compns. with good

adhesion and decreased odor)

IT Polymerization catalysts  
(cationic, photochem.; Michael adduct-containing UV-curable compns. with good adhesion and decreased odor)

IT 105-45-3DP, Methyl acetoacetate, Michael adduct with trimethylolpropane triacrylate 123-54-6DP, Acetyl acetone, Michael adduct with trimethylolpropane triacrylate 15625-89-5DP, Trimethylolpropane triacrylate, Michael adduct with Me acetoacetate or acetyl acetone  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(Michael adduct-containing UV-curable compns. with good adhesion and decreased odor)

IT 25085-98-7, CyraCure UVR 6105  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(Michael adduct-containing UV-curable compns. with good adhesion and decreased odor)

IT 104558-95-4, CyraCure UVI 6990  
RL: CAT (Catalyst use); USES (Uses)  
(photochem. cationic polymerization catalyst; Michael adduct-containing UV-curable compns. with good adhesion and decreased odor)

L30 ANSWER 8 OF 15 HCPLUS COPYRIGHT 2011 ACS on STN  
ACCESSION NUMBER: 2004:510202 HCPLUS Full-text  
DOCUMENT NUMBER: 141:55121  
TITLE: Curable liquid compositions containing acrylate groups and  $\beta$ -dicarbonyl compounds, reactive compound preparation, and use  
INVENTOR(S): Lachowicz, Artur; Gaudl, Kai-Uwe; Nahm, Steven H.; Grahe, Gerwald F.  
PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan  
SOURCE: Eur. Pat. Appl., 24 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1431320	A1	20040623	EP 2002-28724	200212 20
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK CA 2510278	A1	20040708	CA 2003-2510278	200312 19
WO 2004056897	A1	20040708	WO 2003-JP16383	200312 19
W: CA, JP, US RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR EP 1578824	A1	20050928	EP 2003-789615	200312 19

EP 1578824	B1	20060531		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006510779	T	20060330	JP 2004-562063	200312 19
AT 328018	T	20060615	AT 2003-789615	200312 19
ES 2262004	T3	20061116	ES 2003-789615	200312 19
US 20060148924	A1	20060706	US 2006-539048	200602 03
PRIORITY APPLN. INFO.:			EP 2002-28724	A 200212 20
			WO 2003-JP16383	W 200312 19

## ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

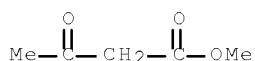
AB The curable liquid compns. contain reactive acrylate groups, which are produced by reacting monofunctional vinyl compds. and multifunctional acrylic esters with  $\beta$ -dicarbonyl compds. having >1 acidic C-H function. The material can be polymerized or crosslinked by free radical polymerization, UV (UV) radiation or electron-beam. The curable liquid compns. are suitable for producing curable coatings, printing inks, adhesives, or molding compns.

IT 105-45-3DP, Methyl acetoacetate, reaction products with polyester, Michael adduct with Bu acrylate, polymer with dipropylene glycol diacrylate 705973-70-2P 705973-71-3P, 2-Acetoacetoxyethyl methacrylate-butyl acrylate-1,6-hexanediol diacrylate-methyl methacrylate-methyl vinyl ketone copolymer 705973-74-6P, Butyl acrylate-diethyl malonate-dipropylene glycol diacrylate-trimethylolpropane triacrylate copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses) (curable liquid compns. of the reaction of multifunctional acrylates, monofunctional vinyl compds., and  $\beta$ -dicarbonyl compds.)

RN 105-45-3 HCPLUS

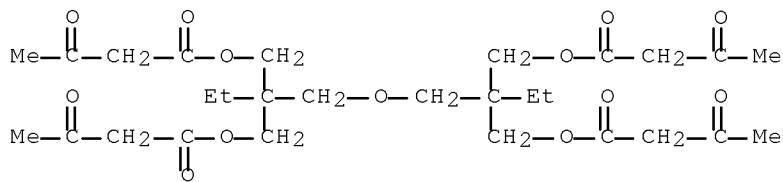
CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



RN 705973-70-2 HCPLUS

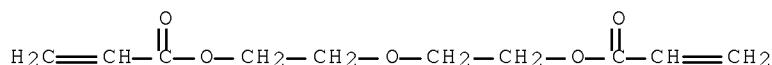
CN Butanoic acid, 3-oxo-, 2-[[2,2-bis[(1,3-dioxobutoxy)methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl ester, polymer with butyl 2-propenoate and oxybis(methyl-2,1-ethanediyl) di-2-propenoate (9CI) (CA INDEX NAME)

CRN 183377-21-1  
 CMF C28 H42 O13



CM 2

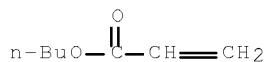
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 CMF C12 H18 O5  
 CCI IDS



2 ( D1—Me )

CM 3

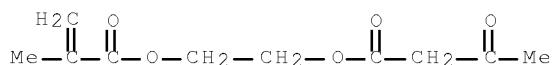
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 CMF C7 H12 O2



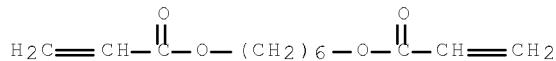
RN 705973-71-3 HCAPLUS  
 CN Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester, polymer with 3-buten-2-one, butyl 2-propenoate, 1,6-hexanediyl di-2-propenoate and methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

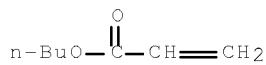
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 CMF C10 H14 O5



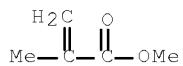
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CRN 13048-33-4  
CMF C12 H18 O4

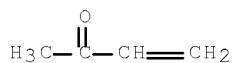
CM 3

CRN 141-32-2  
CMF C7 H12 O2

CM 4

CRN 80-62-6  
CMF C5 H8 O2

CM 5

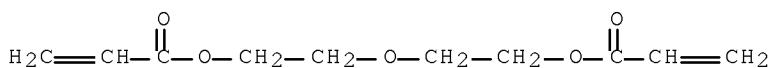
CRN 78-94-4  
CMF C4 H6 O

RN 705973-74-6 HCPLUS

CN Propanedioic acid, diethyl ester, polymer with butyl 2-propenoate,  
2-ethyl-2-[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl  
di-2-propenoate and oxybis(methyl-2,1-ethanediyl) di-2-propenoate  
(9CI) (CA INDEX NAME)

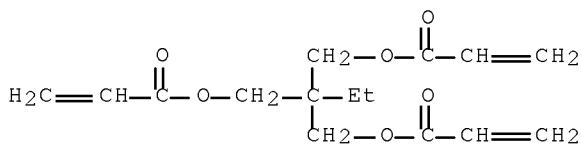
CM 1

CRN 57472-68-1  
CMF C12 H18 O5  
CCI IDS

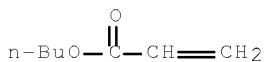


2 ( D1—Me )

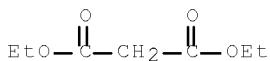
CM 2

CRN 15625-89-5  
CMF C15 H20 O6

CM 3

CRN 141-32-2  
CMF C7 H12 O2

CM 4

CRN 105-53-3  
CMF C7 H12 O4

IPCI C08F0290-06 [ICM, 7]; C09D0004-00 [ICS, 7]; C09D0133-04 [ICS, 7];  
C08G0016-00 [ICS, 7]  
IPCR C08F0290-06 [I, A]; C08F0299-02 [I, A]; C08G0016-00 [I, A]; C09D0004-00  
[I, A]; C09D0133-04 [I, A]  
CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 42  
ST acrylate Michael adduct acetoacetate copolymer curable  
IT Adhesives  
Coating materials  
(curable liquid compns. of the reaction of

multifunctional acrylates, monofunctional vinyl compds., and  $\beta$ -dicarbonyl compds.)

IT Rosin  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
 (maleated, reaction products with pentaerythritol, acetoacetylated, Michael adduct with Bu acrylate, polymer with dipropylene glycol diacrylate; curable liquid compns. containing)

IT Inks  
 (printing; curable liquid compns. of the reaction of multifunctional acrylates, monofunctional vinyl compds., and  $\beta$ -dicarbonyl compds.)

IT 105-45-3DP, Methyl acetoacetate, reaction products with polyester, Michael adduct with Bu acrylate, polymer with dipropylene glycol diacrylate 108-31-6DP, Maleic anhydride, reaction products with rosin, Michael adduct with Bu acrylate, polymer with dipropylene glycol diacrylate 115-77-5DP, Pentaerythritol, reaction products with rosin, Michael adduct with Bu acrylate, polymer with dipropylene glycol diacrylate 123-54-6DP, Acetylacetone, reaction products with polyacrylate 141-32-2DP, Butyl acrylate, Michael adduct with acetoacetylated polyester, polymer with dipropylene glycol diacrylate 57472-68-1DP, Dipropylene glycol diacrylate, polymer with Michael adduct of Bu acrylate and acetoacetylated polyester 311342-07-1DP, 2-Methyl-1,3-propanediol-phthalic anhydride-trimethylolpropane copolymer, reaction products with Me acetoacetate, Michael adduct with Bu acrylate, polymer with dipropylene glycol diacrylate 705973-70-2P 705973-71-3P, 2-Acetoacetoxyethyl methacrylate-butyl acrylate-1,6-hexanediol diacrylate-methyl methacrylate-methyl vinyl ketone copolymer 705973-72-4DP, Butyl acrylate-dipropylene glycol diacrylate-trimethylolpropane triacrylate copolymer, reaction products with acetylacetone 705973-73-5DP, Acrylonitrile-dipropylene glycol diacrylate-trimethylolpropane triacrylate copolymer, reaction products with acetylacetone 705973-74-6P, Butyl acrylate-diethyl malonate-dipropylene glycol diacrylate-trimethylolpropane triacrylate copolymer  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
 (curable liquid compns. of the reaction of multifunctional acrylates, monofunctional vinyl compds., and  $\beta$ -dicarbonyl compds.)

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

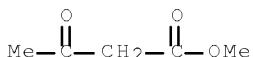
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 2001:56981 HCAPLUS Full-text  
 DOCUMENT NUMBER: 134:117209  
 TITLE: Fluoropolymer-containing abrasion-resistant oil- and waterproofing cationic electrodeposition coatings and their manufacture  
 INVENTOR(S): Hatta, Masao; Nishimura, Shigefumi; Shimizu, Yoshiji  
 PATENT ASSIGNEE(S): Shimizu K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001019897	A	20010123	JP 1999-193437	199907 07
JP 4533476	B2	20100901	JP 1999-193437	199907 07
PRIORITY APPLN. INFO.:				

AB The coatings contain (A) 28-72 parts copolymers of H<sub>2</sub>C:CHR<sub>1</sub>CO<sub>2</sub>R<sub>2</sub> [R<sub>1</sub> = H, Me; R<sub>2</sub> = CH<sub>2</sub>CF<sub>3</sub>, CH<sub>2</sub>(CF<sub>2</sub>)<sub>n</sub>CF<sub>2</sub>H, CH(CF<sub>3</sub>)<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>(CF<sub>2</sub>)<sub>7</sub>CF<sub>3</sub>; n = 1, 3] 10-80, amine-modified (meth)acrylic acid 5-30, OH-modified (meth)acrylic acid 5-30, and styrene or (meth)acrylate esters 10-30%, (B) 18-42 parts diisocyanates blocked by phenol, cresol, methylethylene ketoxime, acetoxime,  $\epsilon$ -caprolactam, or acetylacetone, (C) 10-30 parts polysiloxanes prepared by condensation of 50-80% trialkoxysilanes and 20-50% dialkoxysilanes, (D) 10-50 parts fine powders of tetrafluoroethylene (co)polymers, poly(trifluorochloroethylene), or poly(vinylidene fluoride) with particle size 0.1-10  $\mu$ m, and (F) organic acids to neutralize the copolymers of (A). An aqueous composition containing 2,2,2-trifluoroethyl methacrylate-1H,1H,2H,2H-heptadecafluorodecyl methacrylate-dimethylaminoethyl methacrylate-2-hydroxyethyl acrylate-Bu acrylate-styrene copolymer, acetoacetate-blocked HDI-IPDI copolymer, methyltrimethoxysilane-phenyltrimethoxysilane-dimethyldimethoxysilane-diphenyldimethoxysilane copolymer, PTFE, and lactic acid was electrodeposited on a Al panel to form a coating layer.  
 IT 105-45-3DP, Methyl acetoacetate, polyisocyanate blocked by  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM  
 (Technical or engineered material use); PREP (Preparation)  
 ; RACT (Reactant or reagent); USES (Uses)  
 (fluoropolymer-containing cationic electrodeposition coatings)  
 RN 105-45-3 HCPLUS  
 CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



IPCI C09D0133-16 [I,A]; C09D0005-44 [I,A]; C09D0125-08 [I,A]; C09D0127-12 [I,A]; C09D0133-06 [I,A]; C09D0133-14 [I,A]; C09D0175-04 [I,A]; C09D0183-04 [I,A]

IPCR C09D0133-16 [I,A]; C09D0005-44 [I,A]; C09D0125-08 [I,A]; C09D0127-12 [I,A]; C09D0133-06 [I,A]; C09D0133-14 [I,A]; C09D0175-04 [I,A]; C09D0183-04 [I,A]

CC 42-7 (Coatings, Inks, and Related Products)

ST fluoropolymer cationic electrodeposition coating abrasion resistance; oilproofing waterproofing electrodeposition coating silicone; acrylic polyurethane cationic electrodeposition coating; blocked polyisocyanate crosslinker electrodeposition coating

IT Crosslinking agents  
(latent, blocked polyisocyanates; fluoropolymer-containing cationic electrodeposition coatings)

IT Polyureas  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyamide-, blocked, crosslinking agents;  
fluoropolymer-containing cationic electrodeposition coatings)

IT Polyamides, uses  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyurea-, blocked, crosslinking agents;  
fluoropolymer-containing cationic electrodeposition coatings)

IT 142518-21-6DP, Hexamethylene diisocyanate-isophorone diisocyanate copolymer, acetoacetate-blocked  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(crosslinking agents; fluoropolymer-containing cationic electrodeposition coatings)

IT 105-45-3DP, Methyl acetoacetate, polyisocyanate blocked by 127-06-0DP, Acetoxime, polyisocyanate blocked by  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation);  
; RACT (Reactant or reagent); USES (Uses)  
(fluoropolymer-containing cationic electrodeposition coatings)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L30 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2011 ACS on STN  
ACCESSION NUMBER: 2001:12507 HCAPLUS Full-text  
DOCUMENT NUMBER: 134:86974  
TITLE: Liquid oligomers containing unsaturation  
INVENTOR(S): Moy, Thomas M.; Dammann, Laurence; Loza, Roman  
PATENT ASSIGNEE(S): Ashland Inc., USA  
SOURCE: PCT Int. Appl., 34 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2001000684	A1	20010104	WO 1999-US14624	199906 28
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9949621	A1	20010131	AU 1999-49621	

## PRIORITY APPLN. INFO.:

WO 1999-US14624

A

 199906  
 28  
 199906  
 28

AB The liquid oligomeric compns. of this invention are made by the Michael addition reaction of acetoacetate functional donor compds. with multifunctional acrylate receptor compds. where the equivalent ratios of multifunctional acrylate to acetoacetate vary from  $\geq 1:1$  to  $\geq 13.2:1$  depending on the functionality of both multifunctional acrylate and acetoacetate. Unusable gelled or solid oligomer products occur below the claimed ranges. The oligomers of this invention are further crosslinked to make coatings, laminates and adhesives.

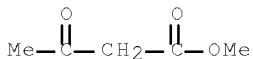
IT 105-45-3DP, Methyl acetoacetate, Michael addition reaction products with acrylates

RL: IMF (Industrial manufacture); PREP (Preparation)

(liquid oligomers containing unsatn.)

RN 105-45-3 HCPLUS

CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



IPCI C08F0002-50 [ICM,6]; C08F0002-46 [ICM,6,C\*]; C08F0022-10 [ICS,6]; C08F0022-00 [ICS,6,C\*]; C08F0122-10 [ICS,6]; C08F0122-00 [ICS,6,C\*]; C08G0002-02 [ICS,6]; C08G0002-16 [ICS,6]; C08G0002-00 [ICS,6,C\*]

IPCR C08F0002-46 [I,C\*]; C08F0002-50 [I,A]; C08F0290-00 [I,C\*]; C08F0290-06 [I,A]; C08G0016-00 [I,C\*]; C08G0016-00 [I,A]

CC 37-3 (Plastics Manufacture and Processing)

IT 102-01-2DP, Acetoacetanilide, Michael addition reaction products with acrylates 105-45-3DP, Methyl acetoacetate, Michael addition reaction products with acrylates 105-56-6DP, Ethyl cyanoacetate, Michael addition reaction products with acrylates 108-59-8DP, Dimethyl malonate, Michael addition reaction products with acrylates 141-97-9DP, Ethyl acetoacetate, Michael addition reaction products with acrylates 4986-89-4DP, Pentaerythritol tetraacrylate, Michael addition reaction products with acetoacetates 6079-98-7DP, Michael addition reaction products with acrylates 13018-41-2DP, Michael addition reaction products with acrylates 13048-33-4DP, Michael addition reaction products with acetoacetates 14276-67-6DP, Michael addition reaction products with acrylates 15625-89-5DP, Trimethylolpropanetriacrylate, Michael addition reaction products with acetoacetates 32818-60-3DP, Pentaerythritol tetraacetoacetate, Michael addition reaction products with acrylates 32818-62-5DP, Michael addition reaction products with acrylates 42978-66-5DP, Tripropylene glycol diacrylate, Michael addition reaction products with acetoacetates 114866-94-3DP, Pentanedione, Michael addition reaction products with acrylates

RL: IMF (Industrial manufacture); PREP (Preparation)

(liquid oligomers containing unsatn.)

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

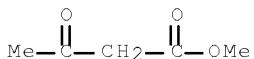
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

## IN THE RE FORMAT

L30 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 2000:55813 HCAPLUS Full-text  
 DOCUMENT NUMBER: 132:65080  
 TITLE: Preparation of one-component moisture-curable polyurethane adhesives and sealants  
 INVENTOR(S): Xie, Lei; Hu, Shoufan; Yao, Guochen; Wang, Guoxiang  
 PATENT ASSIGNEE(S): Jilin Science & Technology Development Industrial Corp., Peop. Rep. China  
 SOURCE: Faming Zhanli Shenqing Gongkai Shuomingshu, 8 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
CN 1161362	A	19971008	CN 1997-100755	199702 21
CN 1048517	C	20000119	CN 1997-100755	199702 21
PRIORITY APPLN. INFO.:				

AB The adhesive/sealant is prepared by addition polymerizing a polyether triol (e.g., polypropylene glycol glycerol ether) with an aromatic diisocyanate (e.g., MDI and TDI), chain-extending the urethane prepolymer with C3-4 diol (e.g., propanediol), and blocking the polymers with a block agent (e.g., Et acetoacetate).  
 IT 105-45-3DP, Methyl acetoacetate, reaction products with NCO-terminated polyurethanes  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of one-component polyurethane adhesives and sealants)  
 RN 105-45-3 HCAPLUS  
 CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



IPCI C09J0175-04 [ICM,6]; C09K0003-10 [ICS,6]  
 IPCR C09J0175-04 [I,A]; C09J0175-08 [I,A]; C09K0003-10 [I,A]  
 CC 38-3 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 42

IT Adhesives  
 Sealing compositions  
 (moisture-curable; preparation of one-component polyurethane adhesives and sealants)  
 IT 105-45-3DP, Methyl acetoacetate, reaction products with NCO-terminated polyurethanes 105-53-3DP, Diethyl malonate,

reaction products with NCO-terminated polyurethanes 108-59-8DP, Dimethyl malonate, reaction products with NCO-terminated polyurethanes 141-97-9DP, Ethyl acetoacetate, reaction products with NCO-terminated polyurethanes 6186-89-6DP, Methylethyl malonate, reaction products with NCO-terminated polyurethanes 253353-52-5DP, Et acetoacetate-blocked  
 RL: ~~IMF~~ (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of one-component polyurethane adhesives and sealants)

L30 ANSWER 12 OF 15 HCPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 1997:121445 HCPLUS Full-text  
 DOCUMENT NUMBER: 126:132729  
 ORIGINAL REFERENCE NO.: 126:25621a,25624a  
 TITLE: Coating binder composition comprising a strongly activated carbanion-functional polymer and a crosslinker  
 INVENTOR(S): Hendriks, Johannes Wilhelmus Maria  
 PATENT ASSIGNEE(S): DSM N.V., Neth.; Hendriks, Johannes Wilhelmus Maria  
 SOURCE: PCT Int. Appl., 17 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
WO 9641833	A1	19961227	WO 1996-NL221	199606 05
W: AL, AU, BB, BG, BR, CA, CN, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
AU 9659128	A	19970109	AU 1996-59128	199606 05
EP 830422	A1	19980325	EP 1996-916370	199606 05
EP 830422	B1	20000315		
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, PT, FI				
HU 9801933	A2	19981228	HU 1998-1933	199606 05
HU 9801933	A3	19991228		
AT 190637	T	20000415	AT 1996-916370	199606 05
ES 2146398	T3	20000801	ES 1996-916370	199606 05
PL 185685	B1	20030731	PL 1996-323827	199606

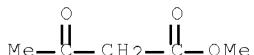
PRIORITY APPLN. INFO.:	NL 1995-1000534	A	05
			199506
			09
	WO 1996-NL221	W	
			199606
			05

AB The crosslinker contains aldehyde groups and the polymer is an alkyd resin or a polyester resin, and the coatings are rapid curing. The carbanion-functional groups are acetoacetate groups, malonate groups, acetoacetate groups or mixts. thereof. Preferably, the polymer is an alkyd resin having said carbanion-functional groups and having a hydroxyl number between 40 and 70 mg of KOH/g of resin and an acid number between 15 and 25 mg of KOH/g of resin.

IT 105-45-3DP, Methyl acetoacetate, reaction products with alkyd resins  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (coating binder composition comprising a strongly activated carbanion-functional polymer and a aldehyde crosslinker )

RN 105-45-3 HCAPLUS

CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



IPCI C08K0005-07 [ICM,6]; C08K0005-00 [ICM,6,C\*]; C08L0067-08 [ICS,6]; C08L0067-00 [ICS,6,C\*]; C08G0063-91 [ICS,6]; C08G0063-00 [ICS,6,C\*]  
 IPCR C08K0005-00 [I,C\*]; C08K0005-07 [I,A]; C09D0167-00 [I,C\*]; C09D0167-00 [I,A]; C09D0167-08 [I,C\*]; C09D0167-08 [I,A]  
 CC 42-10 (Coatings, Inks, and Related Products)  
 ST carbanion polyester rapid curing coating; aldehyde crosslinker carbanion polyester coating; alkyd resin carbanion rapid curing coating  
 IT Crosslinking agents  
 (coating binder composition comprising a strongly activated carbanion-functional polymer and a aldehyde crosslinker )  
 IT Alkyd resins  
 Polyesters, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (coating binder composition comprising a strongly activated carbanion-functional polymer and a aldehyde crosslinker )  
 IT Aldehydes, uses  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
 (coating binder composition comprising a strongly activated carbanion-functional polymer and a aldehyde crosslinker )  
 IT Coating materials  
 (fast-drying; coating binder composition comprising a strongly activated carbanion-functional polymer and a aldehyde

crosslinker)  
 IT Fatty acids, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (tall-oil, reaction products with alkyd resins and Me acetoacetate; coating binder composition comprising a strongly activated carbanion-functional polymer and a aldehyde crosslinker)  
 IT 105-45-3DP, Methyl acetoacetate, reaction products with alkyd resins 26659-15-4DP, Pentaerythritol-phthalic anhydride copolymer, esters with tall-oil fatty acid, reaction products with Me acetoacetate  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (coating binder composition comprising a strongly activated carbanion-functional polymer and a aldehyde crosslinker)  
 )  
 IT 50-00-0, Formaldehyde, uses 111-30-8, Glutaraldehyde  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
 (coating binder composition comprising a strongly activated carbanion-functional polymer and a aldehyde crosslinker)  
 )  
 OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)  
 REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 1981:551624 HCAPLUS Full-text  
 DOCUMENT NUMBER: 95:151624  
 ORIGINAL REFERENCE NO.: 95:25397a,25400a  
 TITLE: Blocked polyisocyanate-isocyanurates  
 INVENTOR(S): Gras, Rainer; Wolf, Elmar  
 PATENT ASSIGNEE(S): Chemische Werke Huels A.-G., Fed. Rep. Ger.  
 SOURCE: Ger. Offen., 16 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

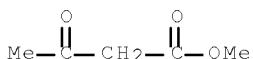
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3001060	A1	19810716	DE 1980-3001060	198001 12
DE 3001060	C2	19891012	DE 1980-3001060	198001 12

PRIORITY APPLN. INFO.:

AB Diisocyanates [e.g., 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate (I) and 2,2,4(2,4,4)-trimethylhexamethylene-1,6- diisocyanate] are trimerized to give isocyanurate group-containing polyisocyanates which are blocked with acidic H-containing blocking agents (e.g., malonic acid dialkyl esters and acetoacetic acid alkyl esters). The blocked polyisocyanate-isocyanurates are useful as hardeners for single-component enamels for wire insulation. Thus,

1000 parts I was heated at 120° for 3 h in the presence of 0.5 part catalyst consisting of 1 part triethylenediamine and 2 parts propylene oxide to give a product containing 67% trimer and 33% pentamer. Then, 100 parts of the above product was treated with 58.1 parts di-Et malonate at 85° in the presence of NaOMe to give a blocked product containing a blocked and free NCO content of 10.5 and 0.4%, resp.

IT 105-45-3DP, reaction products with isocyanurate-containing aliphatic and cycloaliph. polyisocyanates  
 RL: PEP (Physical, engineering or chemical process); **PREP** (Preparation); PROC (Process)  
 (manufacture and properties of)  
 RN 105-45-3 HCPLUS  
 CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



IPCI C08G0018-80 [ICM]  
 IPCR C07D0231-52 [I,A]; C08G0018-80 [I,A]  
 CC 36-2 (Plastics Manufacture and Processing)  
 IT Crosslinking agents  
 (blocked polyisocyanate-isocyanurates, for wire enamels)  
 IT Electric insulators and Dielectrics  
 (coatings, crosslinking agents for, for wire)  
 IT 108-80-5D, isocyanate derivs., reaction products with dialkylmalonates and alkyl acetoacetates  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (crosslinking agent, for single-component wire enamels)  
 IT 105-45-3DP, reaction products with isocyanurate-containing aliphatic and cycloaliph. polyisocyanates 105-53-3DP, reaction products with isocyanurate-containing aliphatic and cycloaliph. polyisocyanates 141-97-9DP, reaction products with isocyanurate-containing aliphatic and cycloaliph. polyisocyanates 15646-96-5DP, reaction products with dialkyl malonates and alkyl acetoacetate 53895-32-2DP, reaction products with dialkyl malonates and alkyl acetoacetate 79411-28-2DP, reaction products with dialkyl malonates and alkyl acetoacetate  
 RL: PEP (Physical, engineering or chemical process); **PREP** (Preparation); PROC (Process)  
 (manufacture and properties of)  
 OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L30 ANSWER 14 OF 15 HCPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 1971:450002 HCPLUS Full-text  
 DOCUMENT NUMBER: 75:50002  
 ORIGINAL REFERENCE NO.: 75:7911a,7914a  
 TITLE: Metal chelates of  $\beta$ -oxoesters  
 INVENTOR(S): Reeder, James A.  
 PATENT ASSIGNEE(S): British Columbia Research Council  
 SOURCE: U.S., 5 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

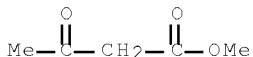
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3578619	A	19710511	US 1969-803471	196902 28
PRIORITY APPLN. INFO.:			US 1969-803471	196902 28

AB Metal chelates of  $\beta$ -ketoesters derived from higher alcohols, glycols polyols, or polymers containing hydroxyl groups were prepared by treating a higher alcohol, glycol, polyol or polymer containing hydroxyl groups with a metal chelate of a  $\beta$ -ketoester derived from a volatile alcohol, so that a transesterification occurred with elimination of the volatile alcohol. Thus, tris(ethyl acetoacetato)copper(II) in dry amyl alcohol was heated 20 hr on a steam bath and the product worked up to give amyl acetoacetate copper complex. The process was also used for chain extending polyester prepolymers with hydroxy end groups, for cross-linking ethyl cellulose and for preparing modified alkyd. resins.

IT 105-45-3DP, Acetoacetic acid, methyl ester, beryllium complexes, polyester with 2,2-dimethyl-1,3-propanediol  
RL: PREP (Preparation)  
(preparation of)

RN 105-45-3 HCPLUS

CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



INCL 260022000

IPCI C07C [ICM]; C07D [ICS]

NCL 528/301.000; 106/018.350; 528/308.000; 528/345.000; 536/058.000;  
554/071.000; 554/074.000; 554/076.000; 554/223.000; 554/224.000;  
554/227.000; 556/040.000; 556/183.000

CC 36 (Plastics Manufacture and Processing)

ST ketoester metal chelate transesterification; polyester metal chelate transesterification; crosslinked cellulose  
transesterification; alkyd resin modified transesterification

IT Crosslinking  
(of ethylcellulose, with ketoester metal chelates)

IT 9004-57-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(crosslinking of, by transesterification with  
tris(ethyl acetoacetato)aluminum)

IT 105-45-3DP, Acetoacetic acid, methyl ester, beryllium complexes, polyester with 2,2-dimethyl-1,3-propanediol  
105-45-3DP, Acetoacetic acid, methyl ester, copper complexes, polyester with 2,2-dimethyl-1,3-propanediol  
105-45-3DP, Acetoacetic acid, methyl ester, copper complexes, polyester with diethylene glycol and maleic anhydride  
105-45-3DP, Acetoacetic acid, methyl ester, copper complexes, polymer with adipic acid, ethylene glycol and 1,2-propanediol 141-97-9DP, Acetoacetic acid, ethyl ester,

aluminum complexes, polyester with adipic acid, ethylene glycol and 1,2-propanediol 141-97-9DP, Acetoacetic acid, ethyl ester, aluminum complexes, polyester with diethylene glycol 141-97-9DP, Acetoacetic acid, ethyl ester, aluminum complexes, polyester with diethylene glycol and maleic anhydride 1779-60-8DP, Acetoacetic acid, propyl ester, metal complexes 6624-84-6DP, Acetoacetic acid, pentyl ester, copper complexes 15556-32-8P 15556-37-3P  
22603-14-1P 33198-03-7P 33198-04-8P 33198-05-9P 33198-06-0P  
33198-07-1P 33198-08-2P 33360-76-8P

RL: PREP (Preparation)

(preparation of)

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L30 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 1969:440316 HCAPLUS Full-text  
 DOCUMENT NUMBER: 71:40316  
 ORIGINAL REFERENCE NO.: 71:7475a, 7478a  
 TITLE: Metal chelates of  $\beta$ -ketoesters  
 INVENTOR(S): Reeder, James A.  
 PATENT ASSIGNEE(S): British Columbia Research Council  
 SOURCE: Can., 18 pp.  
 CODEN: CAXXA4  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 807680	-----	19690304	CA	196711 08

GI For diagram(s), see printed CA Issue.

AB The title compds., useful in protective coating and varnish compns., are prepared by transesterification at 80-170° of a metal chelate of a  $\beta$ -keto ester, derived from a volatile alc., with a higher alc., glycol, polyol, or a polymer containing OH groups. Thus, a solution of 13.0 g. bis(Et acetoacetato)copper (II) in 35 ml. dry PrOH was fractionated slowly for 3 hrs. with continuous addition of PrOH until only pure PrOH was obtained to yield 13.2 g. (94%) of pure I(R = Pr, M = Cu, n = 2), m. 131-2.5° (Et2O). The following I were similarly prepared (R, M, n, and m.p. given): amyl, Cu, 2, 99-103°, (hexane); Pr, Al, 3, - (b0.5 161-9°, n20D 1.5030). Polymeric chelates are similarly prepared from bis(Me acetoacetato)copper (II) (II) and Me2C(CH2OH)2 (III); from bis(Me acetoacetato)beryllium (II) and III; from tris(Et acetoacetato)aluminum (III) (IV) and diethylene glycol (V); from II and a polyester (VI) obtained from adipic acid, ethylene glycol, and propylene glycol; from VI and IV; from II and a polyester (VII) of maleic anhydride and V; and from VII and IV. Et cellulose (VIII) is crosslinked by transesterification with IV to give clear films with greater resistance to heat and solvents than those obtained from uncrosslinked VIII. A linseed oil monoglyceride-phthalic anhydride prepolymer is chain-extended by transesterification with IV to give a modified alkyd resin useful as a clear varnish for wood.

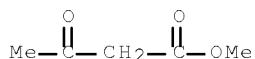
IT 105-45-3DP, Acetoacetic acid, methyl ester, metal complexes

RL: SPN (Synthetic preparation); PREP

(Preparation)

(preparation of)

RN 105-45-3 HCAPLUS  
 CN Butanoic acid, 3-oxo-, methyl ester (CA INDEX NAME)



CC 42 (Coatings, Inks, and Related Products)  
 ST keto ester chelates; chelates keto ester; metal chelates;  
 acetoacetic ester chelates; polymer metal chelates; varnishes; ethyl  
 cellulose crosslinked; polyester chelates; alkyd resin  
 IT 9004-57-3  
 RL: USES (Uses)  
 (metal chelates-crosslinked, films of)  
 IT 105-45-3DP, Acetoacetic acid, methyl ester, metal  
 complexes 141-97-9DP, Acetoacetic acid, ethyl ester, metal  
 complexes 1779-60-8DP, Acetoacetic acid, propyl ester, metal  
 complexes 6624-84-6DP, Acetoacetic acid, pentyl ester, metal  
 complexes 15556-32-8P 15556-37-3P 22603-14-1P 33198-03-7P  
 33198-04-8P 33198-05-9P  
 RL: SPN (Synthetic preparation); PREP  
 (Preparation)  
 (preparation of)

=> d his

(FILE 'HOME' ENTERED AT 13:06:26 ON 13 MAY 2011)

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 E US2006-539048/AP

L1 1 S E3  
 SEL RN

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 L2 12 S E1-12

FILE 'LREGISTRY' ENTERED AT 13:19:39 ON 13 MAY 2011  
 L3 STR

FILE 'REGISTRY' ENTERED AT 13:20:25 ON 13 MAY 2011  
 L4 50 S L3  
 L5 152896 S L3 FUL  
 L6 4 S L5 AND L2

FILE 'HCAPLUS' ENTERED AT 13:25:11 ON 13 MAY 2011  
 L7 5267 S L6  
 L8 173 S L6(L)PREP+ALL/RL

FILE 'LREGISTRY' ENTERED AT 13:26:11 ON 13 MAY 2011  
 L9 STR L3

FILE 'REGISTRY' ENTERED AT 13:28:35 ON 13 MAY 2011  
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 L11 STR L9  
 L12 50 S L11 SSS SAM SUB=L5  
 L13 1164 S L11 SSS FUL SUB=L5  
 SAV L13 BOY048/A

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L14      SCR 2068
L15      0 S L11 AND L14 SSS SAM SUB=L5
L16      11 S L11 AND L14 SSS FUL SUB=L5
          SAV L16 BOY048S1/A
L17      50 S L3 AND L14 SSS SAM SUB=L5
L18      STR L3
L19      44 S L18 AND L14 SSS SAM SUB=L5
L20      SCR 2070
L21      35 S L18 AND L20 SSS SAM SUB=L5
L22      STR L18
L23      20 S L22 AND L20 SSS SAM SUB=L5
L24      SCR 1838
L25      2 S L22 AND L20 NOT L24 SSS SAM SUB=L5
L26      30 S L22 AND L20 NOT L24 SSS FUL SUB=L5
          SEL L26 RN 17 18
L27      2 S E13-14

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FILE 'HCAPLUS' ENTERED AT 14:27:36 ON 13 MAY 2011
L28      2 S L27
L29      QUE CURE# OR CURABLE OR CURING OR CROSSLINK? OR CROSS(W)L
L30      15 S L8 AND L29

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FILE 'REGISTRY' ENTERED AT 14:33:13 ON 13 MAY 2011

FILE 'HCAPLUS' ENTERED AT 14:33:15 ON 13 MAY 2011

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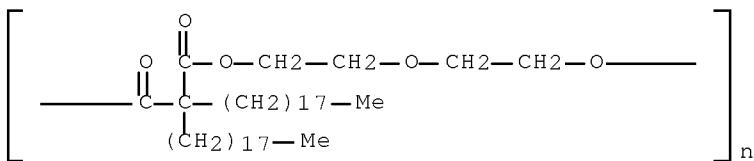
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For an explanation, enter "HELP DISPLAY QUERY".

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L3      STR

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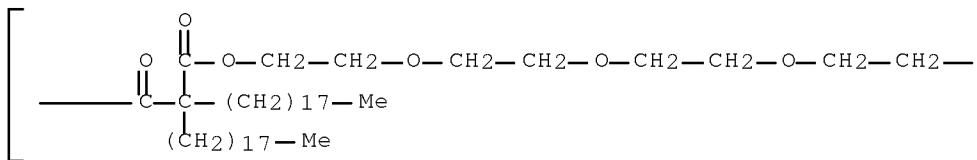


NODE ATTRIBUTES:  
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
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 NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE  
L5 152896 SEA FILE=REGISTRY SSS FUL L3
L20 SCR 2070
L22 STR

PAGE 1-A



## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L24 SCR 1838

L26 30 SEA FILE=REGISTRY SUB=L5 SSSS FUL L22 AND L20 NOT L24

100.0% PROCESSED 145 ITERATIONS

30 ANSWERS

SEARCH TIME: 00.00.01

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